EXPORT PERFORMANCE OF INDIAN AGRICULTURE SECTOR: A STUDY WITH SPECIAL REFERENCE TO EUROPEAN COUNTRIES

SYNOPSIS

Submitted in the partial fulfillment for the requirement of

Doctor of Philosophy

In

Applied Business Economics

SUBMITTED BY

VANDNA DEVI

UNDER THE SUPERVISION OF

DR. SUNEHWER PRASAD
Assistant Professor

AND

PROF.VIJAY KUMAR GANGAL
(Co-Supervisor)

DEPARTMENT OF APPLIED BUSINESS ECONOMICS, FACULTY OF COMMERCE
DAYALBAGH EDUCATIONAL INSTITUTE (DEEMEDUNIVERSITY)
DAYALBAGH, AGRA-282005

2023

1.0 INTRODUCTION - INDIAN AGRICULTURE

Agriculture is the backbone of Indian economy and provides employment to a large majority of the Indian workforce. India has the 10th-largest arable land resources in the world. With 20 agro-climatic regions, all 15 major climates in the world exist in India. The country also possesses 46 of the 60 soil types in the world. Agriculture and related sectors such as forestry and fisheries account for 17 per cent of GDP through this have been declining producer of mango and banana. India ranked in the world's five largest producers of over 80% of agricultural produce items, including many cash crops such as coffee and cotton. India is one of the world's five largest producers of livestock and poultry meat, since 1991. India is the largest producer of spices, pulses, milk, tea, cashew and jute; and the second largest producer of wheat, rice, fruits and vegetables, sugarcane, cotton and oilseeds. Further, India is second in global production of fruits and vegetables after China and is the largest with one of the fastest growthrates.

India is one of the leading emerging market countries worldwide, and one of the fastest growing economies. India's economy has been reporting a promising development of key figure over the last few years: GDP in India has been increasing significantly. India is also among the countries with the largest gross domestic product and among those with the highest gross product domestic growth. Agriculture contribution in the GDP of India is 20.19% in 2020-2021 and share of agriculture and allied sectors in gross value added (GVA) of India at current prices stood at 17.8 % in FY20. (Website of IBEF) Gross Value Added by agriculture, forestry, and fishing was estimated at Rs. 19.48 lakh crore (US$ 276.37 billion) in FY20Consumer spending in India will return to growth in 2021 post the pandemic-led contraction, expanding by as much as 6.6%.

The share of agriculture in employment and other sectors is given in the table as below.

Table 1: (%) Share of agriculture in employment

Sectors	2016	2017	2018	2019
Employment in agriculture	44.6	43.9	43.3	42.6
Employment in industry	24.7	24.9	25	25.1
Employment in services	30.7	31.2	31.7	32.3

Source: World Bank Development Indicators

The table shows that almost half of the population engaged in agriculture and other half is divided between two other sectors. In 2019, 42.6 percent of the workforce in India were employed in agriculture, while the other half was almost evenly distributed among the two other sectors, industry and services (25.1 and 32.3) and in 2018 it was 43.3. While the share of Indians working in agriculture is declining, If we look at the agriculture export of the country India's Agriculture exports grew at 17.34 percent to cross $41.25 billion in 2020-21. Excellent growth of Agriculture exports in FY21 has come after it remained stagnant for the past three years (USD 38.43 billion in 2017-18, USD 38.74 billion in 2018-19 and USD 35.16 billion 2019-20). India's agricultural and allied imports during 2019-20 were USD 20.64 billion, and the corresponding figures for 2020-21 are USD 20.67 billion. Despite COVID-19, the balance of trade in agriculture has improved by 42.16% (website of The Economic Times).

EUROPEAN UNION

The European Union was formally established when the Maastricht Treaty whose main architects were Helmut Kohl and François Mitterrand came into force on 1 November 1993 with 12 nation members.

The European Union (EU) is a political and economic union of 27 member states that are located primarily in Europe. Its members have a combined area of 4,233,255.3 km2 (1,634,469.0 sq mi) and an estimated total population of about 447 million as on 1st Feb 2020. In 1951, six countries founded the European Coal and Steel Community (ECSC) , and later, in 1957, the European Economic Community (EEC) and the European Atomic Energy Community (EAEC). A further 22 countries have since joined the EU, including a historic expansion in 2004 marking the re-unification of Europe after decades of division. As of 1st of February 2020 the United Kingdom is no longer part of the European Union is no longer part of the European Union.

Table 2: List of EU Countries

Belgium	Cyprus	Lithuania
France	Czech Republic	Malta
Italy	Denmark	Poland
Luxembourg	Estonia	Portugal
Netherland	Finland	Romania
Germany	Greece	Slovakia

Austria	Hungary	Slovenia
Bulgaria	Ireland	Spain
Croatia	Latvia	Sweden

EU policies aim to ensure the free movement of people, goods, services and capital within the internal market; enact legislation in justice and home affairs; and maintain common policies, agriculture, fisheries and regional development.

AGRICULTURE EXPORT OF INDIA TO EU

India is an important trade and investment partner for the EU. It represents a sizeable and dynamic market, with an annual GDP growth rate of around 6% (pre Covid 19). In the year 2020-2021 India's total export to European Union was of US $ 55,264.83 mill and agriculture export was **US $** 4131.13 mill. Among them marine products were the highest exported item in 2020-2021 of US $803.41 mill (website of APEDA).

Most exporting agriculture products to EU are marine products, Spices, coffee, oil meals, Basmati Rice, Castor oil etc. and most exporting member countries among EU Members are Netherland, UK, Germany, Belgium, France, Italy etc.

According to EU India Agriculture Forum India has huge opportunity of export in fruits, tea and coffee, rice, Spices and herbs, mustered oil, peanuts and nuts and vegetables. For dairy, there may be opportunities for the EU in the future. If an EU-Indian FTA is agreed, then, given changing consumer habits, India is a potential market for EU exports of high-quality processed milk products

Table 3: India's Agriculture export to EU in last 7 years in US$ Millions

S.No.	HS Code	ProductGroup	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
1	3	Fish and crustaceans	898.15	787.69	867.91	920.13	723.52	693.12	767.3
2	5	Products of animal origin	16.13	15.25	10.01	10.99	8.26	9.64	9.34
3	8	Fruits	306.51	322.03	337.27	434.8	405.49	371.47	32.47
4	9	Tea and beverages	558.23	582.82	614.3	614.88	530.42	485.8	202.79
5	10	Cereals.	220	176.6	180.31	230.91	147.41	123.65	349.19
6	12	OIL seeds	68.5	203.18	207.96	262.33	263.8	268.49	404.03

7	15	Animal or vegetable fats	270.3	228.01	228.99	339.47	268.36	323.58	148.13
8	20	Preparations of vegetables, fruit	109.79	112.27	108.71	133.51	137.44	137.49	29.31
9	21	Miscellaneous edible preparations.	65.26	68.32	67.66	80.8	79.13	84.86	48.04
10	23	Residues and waste from the food industries;	140.29	35.1	135.98	272.81	246.97	67.8	139.69
11	24	Tobacco	254.12	284.84	277.01	267.22	236.69	239.71	20.81
12	41	Raw hides and skins	325.97	246.2	212.76	225.16	178.11	136.03	268.36
13	44	Wood and articles of wood;	71.13	82.43	62.53	62	62.73	66.52	99.27
14	52	Cotton.	530.17	476	503.31	558.02	477.3	414.52	0.05
		Total Agriculture Export to EU	4154	3918	4201	4910	4380	4005	2520
		Total Export to EU	**40,172.01**	**35,743.72**	**38,761.98**	**43,906.87**	**47,862.97**	**44,991.02**	**55,264.83**
		%of Agriculture Export in total Export	10.34	10.96	10.83	11.18	9.15	8.9	4.56

2.0 REVIEW OF LITERATURE

J.Sheeba, and R.Reena (2019) in his paper "Export and import performance of agriculture in India" analyzed the agricultural export and import in India and determined the Growth level in Agricultural export and import. The tools adopted for study are Common Size method, Agricultural Export and Import Trade Balance and Growth of Export and Import in India. The findings of the studies show that the Indian agriculture exports have been increased while compares to import. The Indian government needs to take some effective steps to raise its agricultural export with helping the exporters.

Gaikar Vilas (2019) through his paper "An evaluation of agricultural trade in India: a special study of selected agricultural commodities" studied the agricultural trade in India. He also evaluated various trends in agricultural trade and studied the growth rates in agricultural commodity trade and also

evaluated the export and import of agricultural trade in India and suggested various measures to improve agricultural trade in India. He analyzed the growth in trade for agricultural commodity of India by employing an exponential model. The data was analyzed and evaluated by using Carl Pearson's co relation co efficient test. He concluded that Indian agricultural trade has tremendous potential to earn foreign currencies through export of various agro based commodities trade. It can also help in employment generation.

Tamil Selvi K (2019) conducted his research "Influence of non-tariff barriers and green economy measures on export trade behavior of agricultural and processed food exporters in Tamil Nadu" To understand the growth and trend of India's Agricultural and Processed Food Products Exports. And identify the Trade behavior of Agricultural and Processed Food Products exporters and also to assess their perception towards Non-Tariff Trade Barriers and Green Economy measures. And to examine the influence of Non-Tariff Trade Barriers and Green Economy Measures on Export Trade Behavior of Agricultural and Processed food Products Exporters. The study concluded that Food security and standards has become a crucial issue that the developed countries impose on exporters of other nations which affects their market access. The study proved that the institutional, structural and policy barriers are influencing the trade behavior especially on decision motives and the compliance capacity influence of non-tariff barriers and Green economy measures on export trade Behavior of agricultural and processed Food exporters in Tamil Nadu of the exporters.

Palanisingh, V (2019) in his research "Agriculture exports of India- composition, direction, dynamics and competitiveness" analyzed the commodity-wise and country-wise agriculture exports of India and trend thereof. According to his study India is the largest exporter of Floriculture & Seeds, Processed Fruits and Vegetables to European Union, the largest exporter of Fresh Fruits and Vegetables to South Asia, Animal Products to ASEAN etc. and six problems faced by agriculture exporters were identified like documentation, transportation, financial, information, distribution and awareness.

Bhuimali Anil and Chakraborty Debasish (2018) has conducted his research through his paper "Scenario of Indian agricultural export of major agricultural commodities in the post WTO regime" to find India's position in the world in agricultural trade & export and increase or decrease in agricultural exports and import during the post WTO period and also Agricultural trading policies in order to protect

its domestic market and benefit from new international multilateral trade agreements. He found that WTO has a mixed impact on India's Agricultural commodity Export. In one side WTO impacted negatively where many selected agricultural commodities export shares have been declined than pre-WTO era and at the same time WTO didn't help to gain expertise in agricultural trade, on the other hand it has helped increasing export share of many other agricultural trading commodities and at the same time it has helped India to gain world agricultural export market share by improving India's position in the global agricultural export.

Parama Lakshmi Devi E (2017) conducted his research "An economic study of foreign trade of agricultural products in India" To review the India's trade policy for agricultural exports and imports since independence and to analyze the trend and composition of India's agricultural products export in India's foreign trade during the study period from 1990 – 1991 to 2015 – 2016.and also to identify the determinants of India's agricultural products exports and imports. The study concluded that Growth performance of India's exports during the post-reforms period has been quite satisfactory as compared to the world exports. Rice was the most exported item in that period. Marine products were the second most important item and meat & preparations remained the third most important item. Higher domestic prices in comparison to international prices of bulk agriculture export make them commercially less competitive. The setting up of Special Economic Zones (SEZs) for the products identified as having positive prospects by the present study.

Mousavi, Saeid (2014) conducted the study "Growth of agricultural exports in India - a comparative study of pre and post-world trade organization". The study Examined the agricultural export policy of the government, structure and growth of agricultural exports during pre and post WTO and examined the determinants of agricultural export since WTO. The econometrics techniques such as autoregressive distributed lag model and error correction model has been used to determine the relationship between India's agricultural exports and macroeconomic variables. The results show that there exists a long-run and short-run relation between agricultural exports and its determinants and also WTO does not have a positive effect on agricultural exports in the long run but it has positive effect on it in the short run, also paired t-test has confirmed that WTO has positive effect on growth of agricultural exports in India.

Chalawadi Shivanand H. (2013) in his work "Agricultural exports of India: an economic analysis" (1991 to 2012) studied the export growth relationship and export growth trends in India during the post reform period and examined the commodity and market diversification and to identify the problem areas. The study concluded that India's exports grew at an average rate of 11.66 per cent per annum. Rice was the most exported item in that period. Marine products were the second most important item and meat & preparations remained the third most important item, Higher domestic prices in comparison to international prices of bulk agriculture export make them commercially less competitive.

Pandey Archana (2019) in his paper "An analytical study of Indian agriculture crop production and export with reference to wheat" studied the Indian agricultural crop production i.e., wheat and also the Indian export of agriculture crop wheat. Trend analysis, graphical analysis and ANOVA (Analysis of Variance), descriptive statistics like as Mean, Variance and Standard deviation etc. have been used for the testing of hypothesis. He concluded that India is the largest producer of wheat and Indian production of wheat shows linear relationship but India is not much large exporter of agriculture crop wheat. India needs to improve the export strategies and increase the export of agriculture crop wheat.

Masih, Manish (2010) conducted his research "International trade in agricultural commodities with special reference to tropical fruits" To study performance of international trade in agriculture commodities from the post-independence period till the new economic reform in the ninety's, the supply situation, production and market surplus of tropical fruits, the foreign trade in tropical fruits and to suggest measures for the production, marketing and exports of tropical fruits. After independence the regions which produced raw materials like jute and food grains like wheat went into the territory of Pakistan, the independent India realized that there is a shortage of food grains. It was during the Eighth Plan that the attention of the planners and the government was focused on the production of horticultural crops along with other agricultural sectors. Indian produce is exported to an extent of 90 to 92 per cent to OECD, OPEC, Asia and African countries. Green revolution and adoption of high yielding varieties became a boon for India and the country has been able to developed buffer stock. After India became self-sufficient, attention was paid to diversification of the agricultural economy and in the wake of

diversification,

Hosamani, Shivanand B (2010) conduct his research "Production and trade performance of Indian tea under WTO regime- an econometric analysis" to estimate the growth and instability in area, production and productivity, analyze export, import and consumption, direction of trade and export competitiveness of tea during pre and post WTO period. And also, to understand the present price scenario of tea and forecast the future prices. The growth in production of tea during the overall period was found to be the highest and significant. The overall period witnessed a similar trend to post-WTO period with significant and highest growth in world export with 2.35 per cent as compared to import growth of 2.21 per cent. During Overall period Iran emerged as one of the stable importer of Indian tea. The analysis showed that the tea was competitive enough to be exported from India in post WTO as compared to pre-WTO. There is the long-run co-integration between domestic and international as well as within domestic tea auction prices.

Rao, D Srinivasa (2009) in his research "An econometric analysis of spices exports from India" examined the trends in growth and instability of Indian spices exports. He identified the major factors determining the exports of spices from India by estimating export functions for two prominent spice commodities. The study concluded that Indian spices exports grew at a faster rate and displayed more instability compared to total agricultural exports during the study period The level of production, domestic consumption, etc., are the major determinants of Indian spices export performance during the estimation period. There is a long run equilibrium relationship between the instability of Indian spices exports and its determinants. The growth strategy has also been suggested with the help of SWOT Analysis.

Thulasimani P.Krishna (2004) in his work "A study on marine products with special reference to production and export" studied the growth and export performance, composition, direction of marine production in India from 1990 to 1999 5. He assessed the prospects of Indian marine product exports. He concluded that the share of India's marine fish production to the global production has increased from 2.78 per cent to 3.10 per cent during 1990-1999 due to modernization the share of marine products to agricultural exports increased to 16.7 per cent in 1998-1999, which was 1.7 per cent in 1960-1961. Since 1990, India has been able to diversify the products adding cephalopods (cuttle fish, squid and

octopus) and frozen fish. While all these items hold good prospects, the emergence of live fish, chilled fresh water fish, etc., are promising items for the more export. 3. Diversification of products and markets can be effectively done by exporting sardines, deep-sea lobster, frozen fish, eel, tuna, pomffet, etc., to additional markets in Canada, Denmark, East Europe and South East Asia.

Padmasani S Govindarajan, (2003) in his work "Export performance of Indian seafood industry with special reference to shrimp" studied the trend in production and seasonality in export of marine products and shrimp in India, share of different buyers (destination) and sellers (ports of origin of trade) in shrimp export by India and the impact of exchange rate fluctuations on shrimp export and to identify the problems faced by exporters and to suggest specific measures to augment overall export of marine products. There was significant uptrend in production frozen shrimp was the top most item of export contributing on an average 70 per cent of the country's earning from fish export during 1985-86 to 1999-2000. it was not strictly observed in shrimp export as like other marine products a major share of marine products export was directed to three markets namely Japan, USA and EU. Kochi port was the largest port exporting marine products among 11 ports which exports shrimp. The fluctuations in exchange rate seemed to have an effect on the export of shrimp to various markets. The six major problems identified from the primary data were inadequate supply of raw material, lack of infrastructure facilities, difficulties in meeting international quality standards, lack of skilled employees, lack of information about world market and fluctuation in exchange rate.

Kumar M. Arul and Gopalsamy S. (2020) in his paper "Export of the agricultural products in India –with special reference to saarc countries" studied the conceptual framework for the agricultural products of SAARC Countries and analyzed the country-wise export performance of agricultural products to SAARC Countries. For the study a total of 37 groups related to the agricultural products selected out of the overall groups. Linear forecast model Equation model is used. The study also revealed a positive relationship between economic growths to the agricultural sector. India has all the potentials and opportunity to grow faster. Therefore it found out some innovative export of agricultural products and its trade in general for the SAARC and other trade nations in the world.

Pandey Pranesh and Choubey Manesh (2019) has written a paper titled "Agricultural trade diversity of India with asean" to analyze the diversity in agricultural trade between India and ASEAN

nations . Simpsons Index of Diversity (SID) is used in the study to see the extent of diversity in agricultural trade of India with ASEAN. It was concluded that import from ASEAN is more than its export for the entire period. India exports of agricultural products are comparatively diversified with ASEAN compared to its import. The result suggests that there is stability in agriculture export earningsof India from ASEAN

Kumar M Arul , Gopalsamy S. (2019) has written an article " India's export performance of agricultural products to BRICS countries" to study the conceptual framework for the BRICS Countries and to analyze the Export Performance of agricultural products to BRICS Countries. He concluded that Exports of agricultural products to BRICS was increased for Indian economy growth. India can make a strong and healthy relationship with other BRICS Countries through export and import of its products. **Kaur Namita and Sarin Vishal** (2017) in his article titled "Comparative advantages and competitiveness of Indian agricultural products exports to asean in context of India's look east policy" measures the Indian export competitiveness vis-à-vis ASEAN countries in case of agriculture products. In order to measure the competitiveness of country's export an improvised technique based on revealed comparative advantage (RCA) has been used the study shows the lack of diversification and quality improvement in the agriculture export of India towards ASEAN countries, Stagnation in comparative advantages as clarify the reasons why Indian agriculture export has not been on positive note, as far as India's Look East policy is concerned.

Jagdamb *Subhash, H.* (2017) conducted the study on "Impact of asean-India free trade agreement on indian agriculture trade" The study analyzed the tariff policy and tariff reduction commitment on agriculture products under the AIFTA and assessed the volume and direction of trade between India and ASEAN members before and after the signing of the AIFTA. It concluded that ASEAN countries would gain greater market access to India because of drastic tariff liberalization from India's side. But India would have fewer opportunities to increase its market share for agricultural products in ASEAN. India's import intensity is greater than its export intensity with ASEAN countries for agricultural trade. The value of RSCA index consistently declined during the study period. Thus it is showing that India has been losing its competitiveness in exports of agricultural goods to ASEAN countries over the study period.

Jagdambe Subhash (2016) working paper 356 "Analysis of export competitiveness of Indian agricultural products with asean countries" To assess India's trade intensity as well as the Revealed Comparative Advantage (RCA) of the agricultural sector with respect to trade with ASEAN (Association of South-East Asian Nations) at the aggregate and disaggregate levels. The study found that India's export intensity in total agricultural trade was increasing and Import Intensity declining over. The pattern of India's comparative advantage in export of agricultural products varied from one commodity to another. The study suggests that the efforts of Indian exporters should be focused on promotion of export of meat, vegetables and fruits, tea, rice and cereal products. And there is further scope for increasing the destination.

Saxena Raka et al; (2015) in his article "Agricultural trade structure and linkages in saarc: an empirical investigation" studied the trade structure among the SAARC economies and also establishes the linkages between the economic growth and agricultural trade and the comparative advantage in agricultural trade among the SAARC nations. The analysis of structure and direction of agricultural trade from SAARC countries has been done using the descriptive analysis. The comparative advantage in trade of major agricultural commodities has been worked out using the Balassa Index. The study has revealed a unidirectional causality between GDP and agricultural exports. GDP and agricultural imports share bidirectional causality. A unidirectional relationship has been observed between cotton imports of India and Pakistan and also between Indian exports and imports of cotton. There is no causal relationship between India's cotton export and Pakistan's cotton export. And no causal relationship Pakistan's export and import of cotton.

Kumari Nilanjana (2014) in his paper "India's foreign trade with China with special reference to agricultural commodities" analyzed the commodity composition of India's trade with China and studied the relative comparative advantage and trend of trade intensity of India during the period 2001-02-2012-13. The study entails that India has a large export potential in China. Effort is needed to bring a structured change in the export commodity basket as we have a better relative comparative advantage than China in export of agricultural-based products. Further, China has proved to be a fierce competitor for our exports in the world market. So, India needs to complement China as an efficient partner, so that it can emerge competitively for other countries in both the Asian region as well as in the global market.

Nanda Nitya (2012) in his working paper No. 03/12 "Agricultural trade in south Asia barriers and prospects" Measured the Trade intensity and comparative advantage among region countries and analyzed the trends and patterns of trade in agricultural goods in South Asia and also trade barriers and prospects. He concluded that the Comparative advantage patterns in agricultural goods are not quite favorable in promoting intra-regional trade. Infrastructure barriers and Tariff barriers are unlikely to have acted as a major hindrance to intra-regional agricultural trade in South Asia and non tariff barriers can't be quantify easily

Mhaske Vaishali, et al. (2011) in his article titled "Direction of trade of major Indian agricultural commodities among SAARC countries". analyzed the direction of trade and found the competitive position of India. He concluded that Maldives is stable market for rice, Bangladesh is most stable market for all four commodities such as rice, wheat, mango and onion. It was also observed that India was in a competitive position in rice, mango and onion for the period of 2008-09.

Parappurathu Shinoj (2009) has written an article "India-asean trade in agriculture: retrospect and prospect" To look into the status, composition, distribution and intensity of India's agricultural trade with the ASEAN members during the previous decade. Markov chain analysis and conventional linear programming technique was used. The study has shown that it is important to encourage value addition of the primary agricultural products. Indonesia, Malaysia and Vietnam are the largest destinations of India's farm products presently, the scope of intensifying trade with countries like Philippines, Singapore, Thailand, Cambodia, Brunei etc. should also be exploited. India should also take appropriate measures to tackle possible excessive imports under a free trade regime which may adversely affect the domestic producers. In this regard, an import substitution policy for sensitive crops by encouraging its domestic production should be adopted.

Kumar C Nalin (2016) in his working paper 366 "Sensitivity of India's agri-food exports to the European union: an institutional perspective" Reviewed some key issues related to the setting of standards and the effects of trade regulations and trade facilitation in the context of India's agri-food exports to the EU, specifically at the sectoral and institutional levels. He concluded that Issues with information asymmetry and lack of sufficient documentation give rise to concerns at the institutional level despite having mandatory certifications for the specific products. The high number of border

rejections and consignment destructions impacts very negatively on Indian exports.

Kumar Chandan and Bharti Nalin (2018) in his paper "Indo-EU Agricultural Trade: Trade Restrictions and SPS Measures" attempts to examine issues and trends related to trade restrictions and SPS measures with special reference to Indo- European Union (EU) agricultural trade. Results from various indices such as Trade Intensity Index, Revealed Comparative Advantage Index and Export Specialization Index shows the growing trade potential between India and EU. India is in a more vulnerable position in agro- trade than EU due to the SPS measures adopted by the EU. Indian products such as rice, cotton, fruits and vegetables are mostly affected by the EU's SPS measures whereas from the EU side wines and spirits, raw hides and skins and other agro- products are more prone to SPS challenges. Results confirm that authorities from both the sides have adopted reciprocal and restrictive attitude towards trade through various non-tariff measures (NTMs). Proactive steps in trade may tap the Indo- EU agricultural trade potential.

According to the report of Indian Council for Research on International Economic Relations (ICRIER**) SPS Barriers to India's Agriculture Export Learning from the EU Experiences in SPS and Food Safety Standards (2019)**. There are products (such as mangoes, grapes and eggplants) in which Indian exporters have faced rejections or bans in the EU and other markets in the past for SPS issues such as fruit flies or thrips infestation. These issues have now been resolved by implementing measures (such as hot water treatment for the mangoes being exported to the EU or gamma irradiation treatment for the mangoes being exported to the US) that are acceptable to the importing countries. For some products, there are issues with the maximum residue limits (MRLs) permissible for certain chemicals and pesticides as is required by the EU, which can act as SPS barriers for Indian exporters and farmers. For some products such as green peas, green beans and mushrooms, there are hardly any SPS related alerts raised by the EU, but export potential is low.

According to the report on EU India Agriculture Forum (EIAF) of EIFE (Europe India foundation for excellence) 2020 On the call of Indian Prime Minister, The Europe India Foundation along with their European Partners Media India Group, Guna Enterprises and Europe India Chamber of Commerce comes up with the idea to create a platform for India Framer and created "EU India Agriculture Forum – EIAF" to achieve the objective of doubling the income of farmers by 2022 by

shifting the focus on increasing per acre productivity and essential to increase the income of the farmers by identify the potential export market. **And it is believed that Europe has a lot to offer to India, in the precise sectors of Agriculture & Food Processing where India faces multiple issues and challenges**. It shows that how much EU is important for Indian agriculture export.

RESEARCH GAPS AND NEED OF THE STUDY

1. The researcher has failed to find any study which calculates trade indices at the disaggregated level for each of the EU member countries with India.
2. There is hardly any study which helps in the formulation of policies regarding export promotionof Indian Agriculture products in EU Market.
3. Previous studies were product specific or country specific or related with other region such as SAARC, ASEAN, BRICS. No specific studies are related with EU.
4. Previous studies found out the export performance of Indian Agriculture sector but this study will find out the export intensity of agriculture products to European Union region.
5. EU can be the significant market having export potential in respect of agriculture products for India. No such study has been founded. So, this study also aims to find out some potential areasto earn more foreign exchange.

4.0 NEED OF THE STUDY

In recent EU is the 2nd largest destination of Indian Export but It is far behind in Agriculture Export. Agriculture Sector contributes significantly. Indian Agriculture Sector not only full filling the domestic demand but also exporting its products to other Countries too. Despite of all efforts the Agriculture Sector unable to compete with other advanced countries like USA and China Therefore theResearcher makes an attempt to calculate the export intensity and potentiality of Indian Agriculture sector with special reference to EU.

STATEMENT OF THE PROBLEM

The number of efforts has been made in the past for boosting the export from Indian Agriculture Sector. There is a significant change has been registered. The Indian Agriculture Sector has lots of potential toexport its products to advanced countries like EU. Here the main problem of the Research will be- **How Export potentiality and intensity of Indian Agriculture sector be improved with**

specialreference to EU?

5.0 IMPLICATIONS OF THE STUDY:

1. The possible outcome of the present study will be significance to number of policy makers, academician, importer, exporter, industries, educational institutions and government department intheir different points of view.
2. It will also be beneficial to researchers whose areas of study are in agriculture commodity trade, regional integration or international trade and useful for the agencies involved in Governmental andNon-governmental trade.
3. This study will provide a sufficient background analysis and interpretation of India's agriculture trade with EU region.
4. It will also help exporters in identifying the potential market. Because currently India has currentlynot fully captured the EU market It has still untapped areas. For example EU imports more marine products from ASEAN than India despite its longer coastline. A tiny country like Bangladesh exports more labor intensive products such as apparels and leather products than India. EU importsmore by-products of same (chemicals, rubber plastic products) from China and ASEAN than India. Surely, there is a deeper problem, why India is not able to penetrate EU's market.

6.0 OBJECTIVES OF THE STUDY

Following are the objectives of the present study

1. To analyze the performance of Indian Agriculture sector.
2. To critically study the export promotion policies and institutional setup in India in general and forAgriculture in particular.
3. To analyze the Export performance of Indian Agriculture in general and in EU during the study period i.e. 2010 to 2024.
4. To analyze the trend of export Intensity of Indian Agriculture sector with EU during study period.
5. To assess the export potentiality of the Indian agriculture products in EU market and suggest theaction plan to boost exports in future.

7.0 RESEARCH DESIGN AND METHODOLOGY

Scope of Study-The study is exploratory and analytical in nature covering the export performance of Indian Agricultural Sector.

Data Type- Present study purely based on the secondary source of data.

Data Source- The data will be compiled from Ministry of Commerce and Industry, APEDA (Agricultural and processed food Products Export Development Authority), international trade statistics, UN (United Nation) Comtrade website, DGFT (Directorate General of Foreign trade), RBI website, FAOSTAT (Food and Agriculture Organization Statistics) EUROSTAT, WITS (World Integrated Trade Solution)

Period of study - The time series data selected for the present study will be taken from 2010 onwards.

Universe 1- Universe of the study is whole EU which includes 27 members as list given previously in Table 6.

Sample1- Sample of the study is the whole Universe i.e., 27 member countries

Universe 2- Another universe is 32 agriculture related products out of 99 chapters at 2-digit HS Code.

Table 4: List of agriculture products at HS 2-digit Code with their sections

S. No.	Details	Code
Section-1	**Live animals; animal products**	HS 01-05
1	Live animals.	1
2	Meat and meat products	2
3	Fish and crustaceans	3
4	Dairy products and bird eggs	4
5	Products of animal origin	5
Section-2	**Vegetable products**	HS 06-14
6	Live trees and other plants;	6
7	Edible vegetables	7
8	Fruits	8
9	Tea and beverages	9
10	Cereals.	10
11	Products of the milling	11
12	OIL seeds	12
13	LAC; GUMS etc.	13
14	Vegetable plaiting materials;	14
Section-3	**Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes**	HS 15
15	Animal or vegetable fats	15

Section-4	**Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes**	HS 16-24
16	Meat, fish and sea food	16
17	Sugar	17
18	Cocoa and cocoa preparations.	18
19	Cereals preparations	19
20	Preparations of vegetables, fruit	20
21	Miscellaneous edible preparations.	21
22	Beverages	22
23	Residues and waste from the food industries;	23
24	Tobacco	24
5	**Others**	
25	Rubber	40
26	Raw Hides and Skin	41
27	Wood and article of woods	44
28	Pulp of wood or other Fibrous	47
29	Silk	50
30	Wool	51
31	Cotton	52
32	Other Vegetable Fibers	53

Sample 2 - For the study purpose top exported agriculture products from each section (40% of the universe) on the basis of Average of 10 years (2011-12 to 2020-2021) export are selected so as to coverall the sections and important product groups. The list of these products is mentioned below.

Table 5: List products Selected (40% of each section) on the basis of Average of last 10 years

S.No.	**Product Group**	**HS Code**
Section-1	**Live animals; animal products**	
1	Fish and crustaceans	3
2	Products of animal origin	5
Section-2	**Vegetable products**	
3	Fruits	8
4	Tea and beverages	9
5	Cereals.	10
6	OIL seeds	12
Section-3	**Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes**	
7	Animal or vegetable fats and oils	15
Section-4	**Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes**	
8	Preparations of vegetables, fruit	20
9	Miscellaneous edible preparations.	21
10	Residues and waste from the food industries;	23
11	Tobacco	24
	Others	
12	Rubber	40
13	Raw hides and skins	41
14	Cotton.	52

Data Analysis Tools- For analyzing the data, in the present study the Compound annual growth rate, trend analysis will be used to find the growth of export of agriculture commodities during the study period. Export Intensity Index, will be used to measure the export intensity during the study period. Trade Complimentary Index will be used to find the Export Potentiality of the Indian Agriculture products in the EU Market. The details is given below.

Compound Annual Growth Formula and Calculation of CAGRCAGR = (end/start) ^(1/periods)-1

INDICATORS TO BE USED IN THE STUDY

1) **EII (Export Intensity Index)** It is the ratio of a trading partner's share to a country/region's total exports and share of world exports going to the same trading partner. It is calculated as

EII between India and EU = [Xij /Xi] / {[Mj-Mji] /[Mw-Mi]}EII= Export Intensity Index

Xij = Exports of country i (India) to j(EU)Xi =Total exports of country i

Mj=Total Imports of Country j

Mji= Imports of country j from country iMw = Total world imports

Mi= Total imports of country i

A value of this index above unity implies that country i's relative share of exports to country j exceeds country j's share of imports from the ROW.

2) The Trade Complementarity Index

The trade complementarity (TCI) index can provide useful information on prospects for intraregional trade as it shows how well the structures of a country's imports and exports match. In other words, Trade complementarity index (TCI) shows how the India's export baskets match the EU import demand. This is the useful index for knowing the opportunities of export of one country in the other countries import baskets. It also find out India's export, supply match with EU's import demand; and if the complementarity exists, if there are opportunities for India's exports to EU. If there is mismatch, it implies absence of complementarity and there would be low opportunities of India's exports to EU. TCI between countries k and j is defined as

$$\mathbf{TCI_{ij} = 100(1\text{-}sum\ (|m_{ik}\text{-}x_{ij}\ |\ /2))}$$

Where xij is the share of good i in global exports of country j and mik is the share of good i in all imports

of country k. The index is zero when no goods are exported by one country or imported by the other and 100 when the export and import shares exactly match.

8.0 OBJECTIVES AND RESPECTIVE METHODOLOGY

OBJECTIVES	METHODOLOGY
1. To analyze the Performance of Indian agriculture sector.	Analysis of Volume, Composition, Direction by percentage method and time series analysis.
2. To critically study the export promotion policies and institutional setup in India in general and for Agriculture sector inparticular.	The Researcher will Analyze export policy of last 10 years in general and Agriculture sector in particular.
3. To analyze the Export performance of Indian Agriculture in general and in EU duringstudy period i.e., 2010 to 2024	Analysis of Volume, Composition, Direction (different countries of EU) with percentage method and Computation of CAGR, and time series analysis.
4. To analyze the trend of export Intensity of Agriculture sector with EU members during study period.	Export Intensity Index
5. To assess the export potentiality of the Indian agriculture products in EU market and suggest the action plan to boost exports in future.	Trade Complementarity Index (TCI)

9.0 TENTATIVE CHAPTER PLAN

1. Introduction - Indian agriculture SectoR
2. Review of Literature
3. Research Layout
4. Export Promotion Policies, Institutional setup in the Country in general especially and AgricultureSector particularly
5. Export performance of Indian Agriculture in general and in EU particular
6. The trend of trade Intensity of agriculture product from 2010 onwards
7. Export Potentiality of Indian agriculture products in EU market.
8. Conclusion and Suggestions

10.0 REFERENCES

Archana, P. (2019). An analytical study of Indian agriculture crop production and export with reference towheat. *Journal of Advances In Management Research*, *12*(1).

Arul Kumar, M., & Gopalsamy, S. (2020). Export Of the Agricultural Products In India-With Special Reference To Saarc Countries. *International journal of scientific & technology research*, *9*, 1. www.ijstr.org

Bhuimali, A. (2018). Scenario of Indian Agricultural Export of Major Agricultural Commodities in the Post WTO Regime. *International Journal of Applied Science and Engineering*, *6*(1). https://doi.org/10.30954/2322-0465.1.2018.5

Gaikar, V. (2019, August 22). *An evaluation of agricultural trade in india: a special study of selected agricultural commodities*. https://doi.org/10.20472/iac.2019.045.015

Jagdambe, S., & Institute for Social and Economic Change. (2016). *Analysis of export competitiveness ofIndian agricultural products with ASEAN countries* (356).

Kaur, N., & Sarin, V. (2017). Comparative advantages and competitiveness of indian agricultural products exports to asean in context of india's look east policy. *International Journal of Agricultural StatisticalSciences*, *13*, 159–167. www.agriculturegoods.com

Kumari, N. (2014). India's foreign trade with china with special reference to agricultural commodities. *Journal of Research in Commerce & Management*, *3*(9). www.abhinavjournal.com

Mhaske, V., Yeledhalli, R., Choudhary, K., & Patil, C. (2011). Direction of trade of major Indian agriculturalcommodities. *Agric. Update*, *6*(2), 17–20.

Nalin Kumar, C., & Institute for Social and Economic Change. (2016). *Sensitivity of India's agri-food exportsto the European Union : an institutional perspective* (366).

Nanda, N. (n.d.). *Agricultural Trade in South Asia Barriers and Prospects Nitya Nanda* (03/12). Pandey, P. (2019). Agricultural Trade Diversity of India with Asean. *Economic Affairs*, *64*(3).https://doi.org/10.30954/0424-2513.3.2019.17

Parappurathu, S. (2009). *India-ASEAN trade in agriculture: Retrospect and prospect India-ASEAN*

Trade in Agriculture: Retrospect and Prospect. https://www.researchgate.net/publication/270583484

Pawan, S. (2018). India's Export performance with BRICS Nations. *Journal of Emerging Technologies and Innovative Research, 5*(11). https://www.researchgate.net/publication/330555753

Saxena, R., Paul, R. K., Rana, S., Chaurasia, S., Pal, K., Zeeshan, & Joshi, D. (2015). Agricultural Trade Structure and Linkages in SAARC: An Empirical Investigation. *Agricultural Economics Research Review*,*28*(2), 311. https://doi.org/10.5958/0974-0279.2016.00010.0

Chalawadi, S. H. (2013). *Agricultural exports of india: an economic analysis* [Doctoral Thesis, KarnatakUniversity]. http://hdl.handle.net/10603/98922

Hosamani, S. (2010). *Production and trade performance of indian tea under wto regime- an econometricanalysis'* [Doctoral thesis, Karnatak University]. http://hdl.handle.net/10603/96351

Jagdambe, S. (2017). *Impact of asean-india free trade agreement on indian agriculture trade* [Doctoral Thesis, Agricultural development and rural transformation centre institute for social and economicchange]. http://hdl.handle.net/10603/252607

Masih, M. (2010). *International trade in agricultural commodities with special reference to tropical fruits* [Doctoral Thesis, University Of Allahabad]. http://hdl.handle.net/10603/270215

Mousavi, S. (2015). *Growth of agricultural exports in india - a comparative study of pre and post world trade organization* [Doctoral Thesis, Manasagangotri University of Mysore]. http://hdl.handle.net/10603/49963

Padmasani. (2003). *Export performance of indian seafood industry with special reference to shrimp* [Doctoral Thesis, PSGR Krishnammal College for Women]. http://hdl.handle.net/10603/105495

Palanisingh, V. (2019). *Agriculture exports of India-composition, direction, dynamics and competitiveness* [Doctoral Thesis, Karaikudi]. http://hdl.handle.net/10603/288345

Parama Lakshmi Devi, E. (2017). *An economic study of foreign trade of agricultural products in india* [Doctoral thesis, Sarah Tucker College]. http://hdl.handle.net/10603/233696

Rao, S. (2009). *An econometric analysis of spices exports from india* [Doctoral thesis, The Acharya Nagarjuna University]. http://hdl.handle.net/10603/124123

Tamilselvi, K. (2019). *Influence of non-tariff barriers and green economy measures on export trade behaviour of agricultural and processed food exporters in tamilnadu* [Doctoral Thesis, BharathiarUniversity,.]. http://hdl.handle.net/10603/296835

Thulasimani, P. (2004). *A study on marine products with special reference to production and export* [Doctoral Thesis, Bharathiar University,]. : http://hdl.handle.net/10603/105485